

U.S. PTO Customer No. 25280

Case# 5392

REMARKS35 USC Section 112 Rejections:

Claims 16-23 and 25 were rejected under 35 USC Section 112, first paragraph, because the best mode contemplated by the inventor has not been disclosed. The Examiner believes that evidence of concealment of the best mode is based upon a reading of the claims which reveals that claim 16 is actually a substrate, unidentified except by the relative word "hard." The substrate is then subjected to a treatment with a film, but the claim is still to a substrate, not a film-coated substrate, and the affects claimed, a kill rate, are attributed to the substrate, not the substrate-film.

Claims 16-23 and 25 were also rejected under 35 USC Section 112, first paragraph, for failing to comply with the written description requirement. The Examiner believes that the claim(s) contains subject matter which was not disclosed in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The rejection of record in view of the claim reading, above, of a substrate that is attributed to the kill rate, is maintained as Applicant does not show kill rate of the substrate alone.

Applicants have amended claims 16-23 and 25 to clarify that the substrate that exhibits the claimed log kill rate is a *film-coated* hard surface substrate. Thus, Applicants believe that these rejections have now been overcome.

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35 USC Section 102 (a and e) / 103 (a) Rejections:

Claims 1-5 and 16-25 were rejected under 35 USC 102(a and e) as being anticipated by or, in the alternative, under 35 USC 103(a) as obvious over Sherman (US Patent Application Publication 2002/0005145).

The Examiner submits that Sherman provides antimicrobial sol-gel films, (0079) applicable to hard surfaces-roofs (0084, 0219) and to particles (0204-0205). Bacteria are killed (0086, 0087) utilizing silver (0095) although the instant test was not used to determine kill rate to Klebsiella, we are told the efficacy is at least $\frac{1}{2}$ as good as (0099) that of the photocatalyst (0095) alone. Preparation of the films is disclosed at page 10, with heating 400-700 degrees (0178) examples show a kill rate of $>.5$, as 0.03 E.coli were identified compared to non treated of 1 (0226) even with the titanium dioxide, rather than silver, inorganic. See Fig. 6. One would expect the known antimicrobial silver to provide at least as good a kill rate, and equivalent to E.coli, of tested with Klebsiella.

Applicants respectfully submit that pending claims 1-5 and 16-25 are not anticipated by the teachings of Sherman. While the Examiner contends that Sherman discloses certain photocatalytic materials which may contain silver (0095), Applicants respectfully contend that Sherman fails to teach each and every limitation of Applicants claimed invention. More specifically, Applicants contend that Sherman fails to teach a *film forming* sol-gel coating, but rather, teaches "islands of photocatalyst" which "are not made from continuous films of photocatalytic material, but are instead made by attaching discrete nanoparticles of photocatalyst" to various surfaces (0083 and 0084). As such, Applicants' submit that the pending claims, which include the limitation that the sol-gel forms a film, cannot be anticipated by the teachings of Sherman and respectfully request that this rejection be withdrawn.

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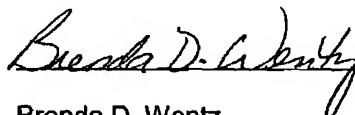
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With regard to obviousness, Applicants respectfully contend that the disclosure by Sherman, as discussed above, that the photocatalytic material is non-film forming, teaches away from Applicants' claimed invention. Applicants specifically claim that the sol-gel is a film which is used to coat a hard substrate. Sherman specifically teaches that the sol-gel is not a film, but is comprised of "discrete nanoparticles of photocatalyst" (0083). As such, Applicants respectfully submit that their sol-gel films and coated hard substrates, as currently claimed, are not obvious variations of Sherman's invention. Thus, Applicants respectfully request that this rejection be withdrawn.

In view of the above amendments and remarks, reconsideration of pending claims 1-5 and 16-25 is earnestly solicited.

Respectfully requested,

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